LENDING DECISION, SACCO SIZE AND LIQUIDITY OF FARMERS BASED DEPOSIT-TAKING SACCOS IN KENYA

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Abstract

Kenyan farmers' Deposit-taking Savings and Credit Co-operatives (DT-SACCOs) have seen a drop in credit provision, from 9.6 % in 2022 to 5.2 % in 2023. Additionally, 52 % of these SACCOs have been declared illiquid due to imprudent lending practices. This has led to the closure or license revocation of 33 % of farmers-based DT-SACCOs. To address this issue, the study aimed to assess the moderating effect of SACCO size on the relationship between lending decisions and liquidity of farmers-based DT-SACCOs. The study employed an explanatory research design and utilized self-administered questionnaires. The study findings indicate that SACCO size significantly moderates the relationship between lending decisions and liquidity of farmers-based DT-SACCOs. As a recommendation, SACCOs should consider their size when making lending decisions, allowing larger SACCOs to manage more risk in loans to farmers, while smaller SACCOs may need to exercise more caution.

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1. Introduction

A SACCO is a financial cooperative enterprise providing financial intermediation on behalf of members with the common goal of solving their financial, social and cultural needs in line with international cooperative principles. They play a great role in the provision of financial services to the unbanked and have financially included 12.69 % of the world population (World Council of Credit Unions [WOCCU], 2021). This has seen them mobilize $2.2 trillion for investing in loan portfolios, government securities, shares and stocks making them a key investment vehicle (World Co-operative Monitor [WCM], 2022). Globally, lending is usually considered to be the SACCOs' core investment and takes a larger portion which accounts for 85 % of the total investments. Investments in government securities, shares and stocks account for 15 % (WOCCU, 2020). However, in the United States of America, in less than two years, more than 1,500 SACCOs collapsed. On the other hand, in Ireland and Germany, 210 SACCOs and 900 branches had been declared non-operational in less than one year (Coelho, et al., 2019). Notably, many of the affected institutions are farmers-based SACCOs that heavily rely on irregular and uncertain cash crop payments. In addition, short-term and long-term operations have been disrupted affecting the going concern of the ventures. This highlights the need for improved lending decisions to enhance the liquidity of these SACCOs. More emphasis has been channelled to African SACCOs which are considered an investment vehicle for the reduction of abject poverty that contributes to 48 % of the global poverty level (Amilola & Lerven, 2019)

SACCOs are a widely recognized global financial institution, with Africa accounting for 47 % and Asia for 39 % (WOCCU, 2021). They have significantly boosted financial inclusion, benefiting 44.5 million members through small, affordable loans. This has driven the loan portfolio to $14.05 billion in 2022, up from $12.7 billion in 2021 (WOCCU, 2022). However, complete loan portfolio recovery is not guaranteed, as a portion of loans is diverted to fraudulent financial activities like pyramid schemes, increasing credit risk (Maina, et al., 2020). Consequently, information asymmetry between lenders and

borrowers contributes to this heightened credit risk, with borrowers having more information about how they use the loans.

Borrowers often take advantage of lenders when they lack adequate information, leading to SACCOs extending loans to risky borrowers, thus increasing the overall risk. To mitigate these risks, it's been recommended that SACCOs should use credit reference bureaus to assess their borrowers' credit history (Maina et al., 2020).

In Africa, Kenya has excelled in SACCOs' performance, earning it recognition and an award for being a leader on the continent. It has also climbed the global rankings, reaching the 11th position (Gweyi, 2018). The sector encompasses both DT-SACCOs and Non-Deposit-Taking SACCOs. DT-SACCOs enjoy financial advantages and have been successful in expanding their services to members because they operate with an open bond. However, there has been a growing trend of these SACCOs closing, primarily due to imprudent lending decisions made by untrained staff, which often results in an unmanageable loan portfolio and investments in pyramid schemes. These decisions have led to 74 % of farmers-based DT-SACCOs facing liquidity challenges (Gachenga et al., 2022).

Despite SACCOs broadening their common bond to mobilize savings, asset-liability management remains a challenge. As a result, 52% of DT-SACCOs face illiquidity due to unmanageable loans and rising non-performing loans (SASRA, 2022). Additionally, non-remitted funds have increased to 5.04 billion, posing a threat to the 413 billion in members' savings, as 63 % of SACCOs don't maintain the mandated 5 % non-performing loan threshold. This issue remains perplexing despite government investments in oversight authorities to ensure DT-SACCOs comply with lending regulations and maintain liquidity. The challenge arises because DT-SACCOs lack access to a lender of last resort during liquidity crises, potentially leading to members losing their hard-earned money. Such situations may undermine confidence in this sub-sector, potentially triggering membership withdrawals and license revocation.

Diverse perspectives exist regarding the relationship between lending decision and liquidity in the existing literature. Some studies such as Githaka (2017) and Kamba et al (2016) suggest a positive relationship between lending decision and liquidity, indicating that prudent lending decisions positively impact the financial institution's liquidity. Conversely, Ndagijimana (2017) identified a negative relationship, indicating that excessive liquidity management may lead

to suboptimal lending decisions and lower overall liquidity. These disparities in the existing literature underscore the complexity of the lending decision-liquidity relationship, emphasizing the need for further research to gain a deeper understanding. It is worth noting that larger DT-SACCOs enjoy significant economies of scale, providing them with resources to enhance lending decisions compared to smaller ones (Sebhatu, 2012). Consequently, it's vital to investigate whether SACCO size significantly moderates the relationship between lending decisions and liquidity in farmers-based DT-SACCOs.

2. Literature Review

Information asymmetry theory was established by Akerlof, (1970) but intensively developed by De Meza and Webb, (1976). The theory states that there is an information imbalance between two parties where parties involved behave differently than they would if they had symmetric information. The theory assumes that lenders advance credit to borrowers without screening, thus increasing risk. However, current development in asymmetric theory revealed that risk in a firm differs with size, as small-sized SACCOs with low capital respond to moral hazard incentives by increasing loan portfolio risk, which in turn results in increased non-performing loans in comparison to large-sized SACCOs. Large-sized SACCOs with more capital create a competitive edge thus, employing competent staff who make prudent decisions thus improving SACCOs liquidity while reducing credit risk (Maina, Musangi, & Kinyariro, 2021). The theory postulates that the problem of information asymmetry results from borrowers' misleading information about their financial status. This makes it impossible to distinguish bad borrowers from good perspective borrowers. Therefore, misleading information availed to lenders has led to the overtime pilling of non-performing loans which has led to contingent illiquidity, financial distress and licenses being revoked in the DT-SACCOs.

An empirical review of study predictors was established. Ndambiri, et al., (2017) found that portfolio diversification, loan tenure and loans to shareholders have a positive nexus on the level of non-performing loans. Their study was to determine the effect of loan portfolios on non-performing loans in Kirinyaga. This was guided by modern portfolio theory, capital asset pricing model theory and arbitrage pricing theory. Descriptive and causal research designs were adopted where secondary data for 5 years from 2011 to 2014 was used

to collect data. The study revealed that long-term loans have a high rate of non-performance in comparison to short-term loans due to unforeseen eventualities. SACCOs were advised to diversify loans in different products to reduce non-performance. However, the study relied on portfolio diversification and loan tenure yet, there are other parameters such as natural lending and artificial lending. Henceforth, these parameters having not been studied leave the gap to determine whether they have an impact on SACCOs liquidity.

Githaka, (2017) in the study employed commercial loan theory, Baumol model of cash management, anticipated income theory, liquidity premium theory and free cash theory on the issue of financial factors affecting the liquidity of savings and credit co-operatives in Kirinyaga County. Measurements for financial factors comprised of liquidity management, net cash flow, credit lending and investment in non-core business. Cross-sectional descriptive research design and questionnaires were used to collect data. A purposive method was employed to determine respondents with the information required from 18 SACCOs. The data collected was analysed using inferential statistics. Multiple regression analysis revealed that credit lending, investment in non-core business, liquidity management and liquidity were statistically significant and concluded that SACCOs with sound lending procedures have low credit risk and advised SACCOs to have loan insurance to reduce loss of members' funds due to loan defaults. Additionally, the study was carried out in non-deposit-taking and deposit-taking SACCOs in Kirinyaga County. The current study will be on DT-SACCOs which are regulated by SASRA.

Ndagijimana, (2017) did a study to examine the effect of mobile lending on the financial performance of commercial banks in Kenya. Mobile lending measurements were mobile loans, loan applicants and lending rates. The study was anchored on agency theory, bank-focused theory, innovation diffusion theory and financial intermediation theory. Secondary data was collected from four commercial banks that offered mobile banking and analysed using inferential statistics. The study revealed that mobile loans had a negative relationship with the financial performance of commercial banks and advised commercial banks to implement mobile banking as it reduces cost and increases competitive advantage. From the findings, the study recommended commercial banks adopt mobile lending to help customers make transactions in their convenient time even in their rural areas. However, it is not clear how data was analysed and for which duration, this

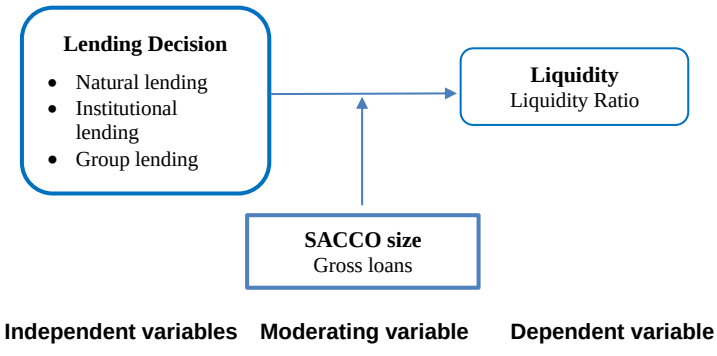
creates suspicion of the results and the relationships in the study. Furthermore, Ndagijimana, (2017) carried out the research in commercial banks and not in SACCOs raising the need for a similar study to determine the effect in SACCOs.

Transaction cost theory anchored the study carried out to determine the relationship between short-term loans and the financial sustainability of Microfinance institutions in the Imenti North sub-county (Kamba, et al., 2016). Census method was carried out in eleven micro-finance institutions while purposive sampling helped to get respondents. Primary data by use of a questionnaire was analysed using Pearson correlation and descriptive statistics. From the correlation, the study found a significant nexus between short-term loans and financial sustainability and concluded that micro-finance should utilize credit reference bureau to check the credit reports of borrowers. Consequently, the study found that long-term loan increases poverty in comparison to short-term loans. The study recommended micro-finance to be innovative enough to ensure sustainability. According to Kamba, et al., (2016), the study was based on a purposive design which may be judgmental hence leading to a high level of bias, which makes it hard to make a decisive conclusion. Additionally, the study was carried out in Imenti North due to the high rise of micro-finance and not a social problem therefore the research findings cannot represent a clear picture of the effects of short-term loans and financial sustainability.

The study adopted an explanatory research design.

Figure 1

Conceptual framework



Source: Authors' presentation

3. Research Methodology

In determination of the sample size, farmers-based DT-SACCOs were clustered in 5 regions (Central, Rift valley, Nyanza, Western and Nairobi) that had farmers-based DT-SACCOs. The study population consisted of 49 finance managers and 49 credit managers of the 49 farmers-based DT-SACCOs. The sample size was determined using the Yamane formula, resulting in 78 respondents, of which 90 % completed the questionnaires. The secondary data collection sheet collected data for the year 2019 from the audited financial report of the SACCOs. The reliability of the questionnaires was confirmed, revealing a Cronbach Alpha Coefficient of 0.821, indicating the reliability of the questionnaire. The study utilized a hierarchical regression model to assess the moderating effect of SACCO size on the relationship between lending decisions and liquidity in farmers-based DT-SACCOs, with the assistance of the following equations:

$$Y = \beta_0 + \beta_1 NL + \beta_2 IL + \beta_3 GL + \varepsilon \quad (1)$$

$$Y = \beta_0 + \beta_1 NL + \beta_2 IL + \beta_3 GL + \beta_4 SZ + \varepsilon \quad (2)$$

$$Y = \beta_0 + \beta_1 NL + \beta_2 IL + \beta_3 GL + \beta_4 SZ + \beta_5 NL * SZ + \beta_6 IL * SZ + \beta_7 GL * SZ + \varepsilon \quad (3)$$

Where:
Y = liquidity (dependent variable),
β_0 = the constant, β_1, β_2, β_3 β_4, β_5, β_6, β_7 = coefficients
$NL\ (Natural\ lending)$ $IL\ (Institutional\ lending)$, $GL\ (Group\ lending)$ = the predictor variables
$SZ\ (SACCO\ size)$ = the moderating variable
ε = error term

R change and R-squared change determined the strength of the moderator between lending decision and liquidity. Further, to determine significance, p-values were considered.

4. Results and Discussion

4.1. Lending Decision descriptive results

Lending decisions were assessed based on natural lending, institutional lending, and group lending parameters. The study utilized a five-point Likert scale questionnaire to gauge agreement levels, with

1 representing the lowest and 5 indicating the highest score. Descriptive results in Table 1 reveal that the construct with the highest score pertained to the impact of price fluctuations on members' loan repayments, with a mean of 4.3. Additionally, lending to members was highly preferred, scoring a mean of 4.22. Members also showed a preference for investment in long-term loans, with a mean of 4.12, and short-term loans, with a mean of 4.06. Medium-term loans were also favoured, receiving a mean score of 3.94. Furthermore, investment in lending to groups was relatively preferred, garnering a mean of 3.82. Members perceived lending to individuals as having a higher risk of default compared to lending to groups, with a mean of 3.70. It was also noted that the organization typically considered the credit history of borrowers before lending, with a mean of 3.84. Members perceived lending to groups as riskier, scoring a mean of 3.85. SACCOs insuring loans against defaulters received a mean of 3.81. Finally, it was observed that most borrowers were affiliated with groups, with a mean of 3.65, and a majority of borrowers were above 50 years of age, with a mean of 3.52.

Table 1

Lending decisions

Statements	**Mean statistic**	**Std. Deviation Statistic**
Investment in long-term loans is more preferred by the members	4.12	0.712
Investment in short-term loans is highly preferred by the members	4.06	0.718
Medium-term loans are more preferred by the members	3.94	0.771
Lending to members is highly preferred	4.22	0.710
Investment in lending to groups is highly preferred by the members	3.82	0.811
Lending to members has a high risk of default in comparison to groups	3.70	0.825
Before lending the organization usually considers the credit history of the borrower	3.84	0.831
Lending to groups is considered risky by members	3.85	0.860
SACCO ensures its loans towards loan defaulters	3.81	0.827
Price fluctuation has affected members' loans repayment	4.3	0.705

Statements	Mean statistic	Std. Deviation Statistic
Majority of borrowers are groups	3.65	0.821
Majority of borrowers are above 50 years of age	3.52	0.942

Source: Authors' calculations

The analysis in Table 1 highlights that the downward spiral of agricultural price fluctuations significantly impacts the loan portfolio. This may be a contributing factor to the 39 (80 %) of farmers-based DT-SACCOs that fail to meet the prescribed non-performing asset threshold of 5 % (SASRA, 2021), particularly because members heavily rely on agriculture as their primary source of income. Furthermore, the study revealed that SACCOs continue to focus on investing in their members, aligning with the Cooperative Act's principles. This underscores SACCOs' ongoing commitment to their primary role of providing loans to members, with a strong preference for long-term loans over short-term ones. This aligns with Ndambiri et al. (2017), who found that members typically prefer long-term loans despite the unpredictability of events and price movements in the agricultural sector.

Moreover, the study found that loan advanced to members has a high default rate in comparison to loan advanced to groups and institutions. However, 41.4 % of the respondents were of the view that SACCOs don't hedge loan portfolios and that they don't consider borrowers' credit history before advancing loans. This may increase the loan portfolio risk as SACCOs do not insure deposits like commercial banks which may be a time bomb. Consequently, findings on whether lending to groups is considered risky by members in comparison to groups revealed a divergent finding in the study carried out by Nderitu, (2018) who established that lending to members in the group increases the risk of default in comparison to the group which disagrees to study findings. Consequently, the study aligns with SASRA, (2021) by revealing that institutional lending has increased credit risk for SACCOs as 50 SACCOs were owed kshs 5.04 billion being non-remitted funds.

4.2. KMO and Bartlett's test of lending decision

Further analysis of the sample adequacy test was carried out to confirm whether the data collected was appropriate for factor

analysis. Test for multicollinearity was first carried out and revealed a correlation matrix determinant of 0.113 which is more than the identity matrix 0.00001 stipulating the absence of multicollinearity between variables. This led to further testing into whether factor analysis is appropriate in factor condensing. Kaiser Mayer Olkin and Bartlett test were considered. The computed value for the Kaiser-Meyer-Olkin measure of sampling adequacy was 0.857. This was found to be an acceptable measure in agreement with (Saunders, et al., 2009). On the other hand, Bartlett's test of Sphericity was employed and indicated that the null hypothesis test; whether the correlation matrix was equal to the identity matrix, was highly significant with a P value of 0.000 (P=0.000<0.05) at approximated Chi-square of 238.860 and 66 degrees of freedom. Therefore, the null hypothesis was rejected, and the correlation matrix is not an identity matrix. Hence, factor analysis was further considered appropriate for the data set in the study. The study further conducted principal component analysis and varimax rotation as shown in Table 2.

Table 2

Principal component analysis results for lending decision

Compo-nent	Initial Eigenvalues			Rotation Sums of Squared Loadings		
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	4.354	36.284	36.284	4.140	34.503	34.503
2	1.322	11.014	47.298	1.355	11.289	45.792
3	1.118	9.320	56.618	1.299	10.825	56.618
4	.920	7.670	64.288			
5	.814	6.784	71.072			
6	.717	5.974	77.046			
7	.653	5.443	82.488			
8	.566	4.718	87.207			
9	.469	3.912	91.118			
10	.455	3.790	94.908			
11	.374	3.120	98.029			
12	.237	1.971	100.000			

Source: Authors' calculations

As shown in Table 2 three factors (natural lending, institutional lending and group lending) were retained after conducting the principal component analysis and varimax rotation (orthogonal rotation) as they had an Eigenvalue greater than one and accounted for a total variance of 56.618 for observed variables. The retained factors were further used in the hierarchical regression model.

4.3. Lending Decision, SACCO Size and Liquidity

Hierarchical regression models were employed to establish the moderating effect of SACCO size on the relationship between lending decision and liquidity of farmers-based deposit-taking SACCOs. Consequently, the analysis helped to test the hypothesis that, there is no moderating effect of SACCO size on the relationship between lending decision and liquidity of farmers-based Deposit Taking SACCO. R^2 change was used to assess the moderating effect. The results are shown in Table 3.

Table 3

Hierarchical regression results

Predictors	Model 1			Model 2			Model 3		
	Beta	t-value	P Value	Beta	t-value	P Value	Beta	t-value	P Value
Constant	1.016	3.310	0.002	0.781	2.428	0.018	0.141	0.158	0.857
NL	0.185	2.511	0.015	0.158	2.149	0.035	0.448	2.097	0.040
IL	0.344	4.408	0.000	0.332	4.344	0.000	0.079	0.331	0.742
GL	0.244	3.650	0.001	0.231	3.514	0.001	0.398	2.049	0.045
SZ				0.118	2.019	0.048	0.347	1.135	0.261
NL*SZ							-0.089	-1.410	0.163
IL*SZ							0.066	0.993	0.325
GL*SZ							-0.047	-0.858	0.394
R^2 Change	0.557			0.583			0.601		

Source: Authors' calculations

The results as shown in Table 3 depicts that an increase in one unit of natural lending, institutional lending and group lending would lead to an increase in SACCOs' liquidity. Introducing a moderator seems to improve parameter co-efficient, but introducing a moderator in institutional lending seems to weaken the co-efficient. The study further reveals that lending decision has a significant nexus on liquidity with (P value = 0.000) therefore rejecting the null hypothesis that, there

is no relationship between lending decision and liquidity of farmers-based DT-SACCOs. The study supports a study carried out by Onchomba, (2019) who established a significant nexus between lending portfolio and financial performance. Moreover, the study revealed that natural lending, institutional lending, and group lending have a significant nexus on SACCOs with (P value 0.015, 0.000, 0.001).

To test the moderating effect, SACCO size was employed where R^2 change tested the strength between predictor and response variables. Introducing the moderator in model 2, R^2 changed from 0.557 (55.7%) to .583 (58.3%). Thus, an increase in SACCO size strengthened the nexus and an increase in SACCO size will lead to a significant improvement in SACCOs' liquidity. This supports the work of Mbore (2021), and Maina, Kiai, & Kyalo (2021) who found that SACCO size has a positive moderating effect on cash management and financial sustainability of DT-SACCOs in Kenya.

5. Conclusion and recommendation

The study assessed the moderating effect of SACCO size on the relationship between lending decision and liquidity of farmers DT-SACCOs in Kenya. Based on the study findings, SACCO size portrayed a statistically significant moderating effect on the relationship between the independent variable and the response variable.

Based on the conducted study, some recommendations can be mentioned. In this sense, it is recommended that DT-SACCOs should consider their size when making lending decisions. Larger SACCOs may be able to take on more risk and make loans to farmers, while smaller SACCOs may need to be more cautious. SACCOs should strive to increase their size and membership base to improve their ability to manage liquidity and lending risk. SACCOs should consider implementing policies and procedures that help to mitigate lending risk, such as establishing clear criteria for loan approval, conducting thorough credit assessments, and monitoring loan performance closely. Overall, the recommendation was for SACCOs to carefully consider their size and lending policies in order to manage liquidity risk effectively and support the financial needs of their members.

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